

REMARKS

This paper is responsive to any paper(s) indicated above, and is responsive in any other manner indicated below.

PENDING CLAIMS

Claims 1-19 were pending, under consideration and subjected to examination in the Office Action. Appropriate claims have been amended, canceled and/or added (without prejudice or disclaimer) in order to adjust a clarity and/or focus of Applicant's claimed invention. That is, such changes are unrelated to any prior art or scope adjustment and are simply refocused claims in which Applicant is present interested. At entry of this paper, Claims 1-19 will be pending for further consideration and examination in the application.

REJECTION UNDER 35 USC '102

The 35 USC '102 rejection is respectfully traversed. All descriptions of Applicant's disclosed and claimed invention, and all descriptions and rebuttal arguments regarding the applied prior art, as previously submitted by Applicant in any form, are repeated and incorporated hereat by reference. Further, all Office Action statements regarding the prior art rejections are respectfully traversed. As additional arguments, Applicant respectfully submits the following.

In order to properly support a '102 anticipatory-type rejection, any applied art reference must disclose each and every limitation of any rejected claim. The applied art does not adequately support a '102 anticipatory-type rejection because, at

FIG. 5B

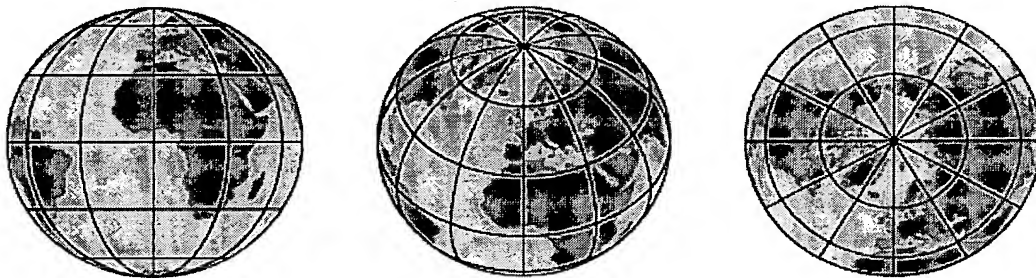
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minimum, such applied art does not
 limitations of Applicant's claims.

Applicant's disclosed and clai
 dependent therefrom, is directed (in
cognizant of distortions present v
coordinate system, and which impl

LATITUDE	COEFFICIENT k
35° ~ 40°	0.79
40° ~ 45°	0.74
45° ~ 50°	0.68
⋮	⋮

More particularly, map data may be divided into cell areas for storage, for example,
 an original map data cell may be bounded by longitudinal (e.g., horizontal or east-
 west) lines and latitudinal (e.g., vertical, north-south, or pole-to-pole) lines as follows.



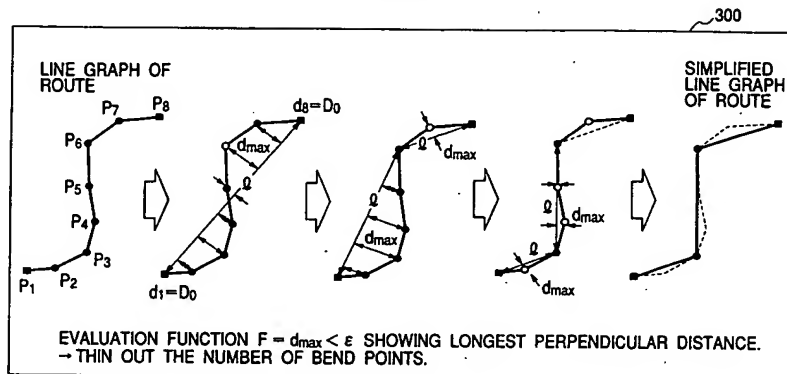
Note that the cells derived from earth (as a sphere) are either trapezoidal or
 triangularly shaped (rather than rectangularly shaped). If data for these trapezoidal
 or triangularly shaped cells is stored in a rectangular coordinate system, it must be
 recognized that distortions will occur, and that the degree of distortion will vary
 according to latitude, e.g., distortion at the equator will be different from a distortion
 close to the north pole. Applicant's invention recognizes that such distortion occurs
 and varies according to latitude, and as a result, Applicant's invention applies a
 correction factor to correct an east-west (longitudinal) width of a route area, where
 the factor is based on latitude values of the routes. As an example, Applicant's FIG.
 5B (reproduced herewith) shows some example coefficients for differing latitudes.

In terms of distinguishing claim language, independent claim 1, states (in part), “a storage unit for map data recorded in a rectangular coordinate system based on a length at the equator where a vertical direction is a latitude and a horizontal direction is longitude; a route search unit for searching for a route based on information on two geographical points; an area generator unit to set an area along the route between the two geographical points by correcting a east-west width of the area by a factor based on latitude values of the routes; and a map search unit to then search for map data for the corrected width area and to output the map data of the corrected width area.”

Turning to rebuttal of Shimada et al., while such reference mentions longitude and latitude, it is not for applying correction, but instead, such mention is only pointing out a Shimada et al. embodiment where a user can enter a longitude and latitude, and Shimada et al.’s arrangement will search for map data pertaining to that longitude and latitude. See block 1145 of Shimada et al.’s FIG. 3, for example. In short, Shimada et al. nowhere suggests correction based upon latitude. Even if Shimada et al. does modify an area, such modification is regardless of longitude or latitude. Accordingly, it is respectfully submitted that Shimada et al. does not support a 102 anticipatory-type rejection of Applicant’s independent claim 1.

Regarding Applicant’s independent claim 2 (and claims dependent therefrom), such arrangement simplifies a number of nodes along a route (such as shown by Applicant’s FIG. 3, reproduced herewith),

FIG. 3



and then retrieves map data based upon the simplified route.

In terms of distinguishing claim language, Applicant's independent claim 2, recites (in part), "a route search unit for searching for a route between two geographical points; a processor unit to simplify the figure of the route by reducing a number of nodes on the route; a map search unit to then search for map data for the area of the simplified route from a map database and to output the map data of the area of the simplified route."

Even assuming arguendo that Shimada et al.'s arrangement applies simplification to routes, it is respectfully noted that Shimada et al.'s arrangement would obtain map data first, and then apply simplification to the obtained map data. Such is in contrast (i.e., opposition) to Applicant's claimed invention, and accordingly, it is respectfully submitted that Shimada et al. does not support a 102 anticipatory-type rejection of Applicant's independent claim 2 (and claims dependent therefrom).

Turning finally to independent claim 3 (and claims dependent therefrom), one important point of such claim is the predicting of enroute stopping points (e.g., a

12:00 noon lunch stop), and to expand the map at route areas proximate these enroute stopping points (e.g., to allow for greater choice of landmarks, such as restaurants).

In terms of distinguishing claim language, independent claim 3 states (in part), "a route area predictor for predicting enroute stopping points along the route based on the information from the terminal and position information of the searched route; an area generator unit to set a search area along the route and to expand the search area along the route in the vicinity of the predicted enroute stopping points; and a map search unit to then search for map data for the search area, which is expanded in the vicinity of the predicted enroute stopping points, from a map database and to output the map data for the search area expanded in the vicinity of the predicted enroute stopping points."

Regarding rebuttal of Shimada et al., Shimada et al. is majorly deficient in NOT predicting enroute stopping points. Even if one were to assume that Shimada et al. predicts stops, for example, at stop signs or lights, Shimada et al.'s arrangement still does not expand a search area in the vicinity of such stops. Accordingly, it is respectfully submitted that Shimada et al. does not support a 102 anticipatory-type rejection of Applicant's independent claim 2 (and claims dependent therefrom).

In addition to the foregoing, the following additional remarks from Applicant's foreign representative are also submitted in support of traversal of the rejection and patentability of Applicant's claims.

Regarding the invention of claim 1, Applicant respectfully submits the following to help the Examiner understand the problem addressed by the invention by explaining the problem inherent to the coordinate system used in the invention.

The present invention uses "a rectangular coordinate system based on the length of the equator where a vertical direction is a latitude and a horizontal direction is longitude", when in reality the earth is a sphere which cannot be accurately projected onto a flat surface. The projection of the earth's feature can be done by several methods all well known to those in the field, and this invention employs "a rectangular coordinate system ...". Please imagine a globe which is divided into grids by lines running from arctic point to Antarctic point along the longitudinal lines, and by lines running horizontally along the latitude lines.

Each of the grid would be like an isosceles trapezoid (or a triangle around the arctic/Antarctic point) draped on a curved surface of the globe. In the map data of the invention, each of the isosceles trapezoid would be approximated into a rectangle, giving rise to inevitable errors if the length on the map is taken to be proportional to the length in reality, regardless of the latitude (because the higher the latitude, the bigger the error. This is easily understood if one thinks about how far apart two places with the difference of 15 degrees (let's say this is the size of the grid) in longitude would be, at the equator, and at the north latitude 60 degrees (it would be half the distance).

A problem more specifically to do with the route searching system of the invention is that, when searching the area along the road (let's say north to south, to simplify the situation), if the width of the search area is defined in the length unit of the map information (e.g. pixels), then the search area width would vary depending

on the latitude, and the higher the latitude, the narrower (in real distance) the same number of pixels-wide strip of the search area. This is why claim 1 has features of “correcting a width of the area based on the latitude values of the routes, and then searching the map data for the corrected width area.”

In contrast, Shimada alters the width of searched area is changed according to the road width (Col.7 lines 34-42), i.e., irrespective of latitude. Nothing of the problems addressed by the invention of claim 1 is mentioned in Shimada, and the width alteration of Shimada is very different from claim 1 in that the “latitude value” is not used.

Regarding claim 2, such arrangement is designed to reduce the processing load for map searching by simplifying the shape of the area to be searched. Shimada does not disclose “a processor unit to simplify the figure of the route by reducing a number of nodes consisting the route”, the simplified route figure used for map searching. In Shimada, simplification is performed on data to be transferred from the map server to the terminal (col.6 lines 12-15). There is no mention of simplifying the route figure to be used for map searching.

The arrangement of claim 3 is designed to predict potential places where the user may choose to stop over on the way from the starting point to the destination, and expand the searched/displayed area on the abbreviated map data. The enroute stopping points are predicted in relation to the route, because, naturally, where a driver may stop over depends on the route he/she is taking. Shimada merely discloses searching for a certain landmark (col. 19 lines 18-27), and there is no mention or suggestion of “predicting” or “predicting using route information”. Rather, as the user explicitly inputs data to search for the post office (col. 19 lines 11-17),

there is no room for "predicting" enroute stopping points just from the searched route.

As a result of all of the foregoing, it is respectfully submitted that the applied art would not support a '102 anticipatory-type rejection of Applicant's claims. Accordingly, reconsideration and withdrawal of such '102 rejection, and express written allowance of all of the '102 rejected claims, are respectfully requested. Further, at this point, it is respectfully submitted as a reminder that, if new art is now cited against any of Applicant's unamended claims, then it would not be proper to make a next action final.

EXAMINER INVITED TO TELEPHONE

The Examiner is herein invited to telephone the undersigned attorneys at the local Washington, D.C. area telephone number of 703/312-6600 for discussing any Examiner's Amendments or other suggested actions for accelerating prosecution and moving the present application to allowance.

RESERVATION OF RIGHTS

It is respectfully submitted that any and all claim amendments and/or cancellations submitted within this paper and throughout prosecution of the present application are without prejudice or disclaimer. That is, any above statements, or any present amendment or cancellation of claims (all made without prejudice or disclaimer), should not be taken as an indication or admission that any objection/rejection was valid, or as a disclaimer of any scope or subject matter. Applicant respectfully reserves all rights to file subsequent related application(s)

(including reissue applications) directed to any/all previously claimed limitations/features which have been subsequently amended or cancelled, or to any/all limitations/features not yet claimed, i.e., Applicant continues (indefinitely) to maintain no intention or desire to dedicate or surrender any limitations/features of subject matter of the present application to the public.

CONCLUSION

In view of the foregoing amendments and remarks, Applicant respectfully submits that the claims listed above as presently being under consideration in the application are now in condition for allowance.

To the extent necessary, Applicant petitions for an extension of time under 37 CFR 1.136. Authorization is herein given to charge any shortage in the fees, including extension of time fees and excess claim fees, to Deposit Account No. 01-2135 (Case No. 501.43771X00) and please credit any excess fees to such deposit account.

Based upon all of the foregoing, allowance of all presently-pending claims is respectfully requested.

Respectfully submitted,

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